

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Patent Application of:	HOKE et al.	:
		:
Application No.:	09/766,723	: Group Art Unit: 1797
		:
Filed:	January 22, 2001	: Examiner: Conley, Sean Everett
		:
For:	METHOD AND APPARATUS	: Confirmation No.: 2047
	FOR TREATING THE	:
	ATMOSPHERE	:
		:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REPLY BRIEF

Sir:

This paper is submitted in response to the Examiner's Answer mailed on September 3, 2009, in the above-identified application. Submission of a reply brief in this case is due by November 3, 2009. Accordingly, this paper is being timely filed. Appellants respectfully request that the following remarks be considered.

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1. Status of the Claims

Claims 1-48 have been cancelled. Claims 49-60 stand finally rejected under 35 U.S.C. § 103(a) and are appealed.¹

¹ The claims also stand finally rejected for obviousness-type double patenting. This rejection is not appealed, and upon indication of an allowable claim, Appellants will submit a properly signed terminal disclaimer.

2. Grounds of Rejection to be Reviewed on Appeal

a. Whether claims 49-59 are unpatentable under 35 U.S.C. § 103(a) over U.S. Patent No. 5,711,071 ("Fromson") in view of DE 4007964 ("Hager").

b. Whether claim 60 is unpatentable under 35 U.S.C. § 103(a) over Fromson in view of Hager and further in view of Appellants' alleged admission of the state of the art.

c. Whether, claims 49-59 are unpatentable under 35 U.S.C. § 103(a) over EP 634205 ("Beitz").

3. **Argument**

Appellants maintain that the claims on appeal are patentable over the references relied on by the Examiner.

a. Claims 49-59 remain rejected as allegedly unpatentable over Fromson in view of Hager. In the Response to Arguments section in the Examiner's Answer, the Examiner states:

Appellant argues that the combination of Fromson and Hager is supported only by an obvious to try rationale because Appellant asserts that the equivalency of the references is not recognized. The Examiner would disagree and point out that both references teach vehicular embodiments and both are addressing ozone abatement with Hager clearly teaching the associated benefit of preventing smog formation which is clear and proper motivation to one of ordinary skill in the art with every expectation of success.

Appellants maintain that the Examiner has failed to establish equivalency between the apparatus of Fromson and that of Hager. MPEP § 2144.06 states, "In order to rely on equivalence as a rationale supporting an obviousness rejection, the equivalency must be recognized in the prior art, and cannot be based on applicant's disclosure or the mere fact that the components at issue are functional or mechanical equivalents." The Examiner asserts that apparatuses of Fromson and Hager are equivalent because both references teach vehicular embodiments. However, the issue is not whether both references teach vehicular embodiments, but whether one of skill in the art would have been motivated to place the catalyst of Fromson, taught only for use in automobiles, to an outdoor component of a HVAC system attached to an immovable structure. *See Ex parte Ng*, Appeal No. 2008-1725, for U.S. Pat. Appl'n No. 10/979,058 (BPAI 2008) ("At the outset, we note that it is fundamental that a prior art disclosure of a functional equivalent of a

claimed element does not necessarily establish the obviousness of the claimed element within the meaning of § 103. It is incumbent upon the Examiner to provide a factual basis to support the legal conclusion that the claimed element, whether a functional equivalent of a prior art element or not, would have been obvious to one of ordinary skill in the art in the context of the claimed invention.").

As noted in Appellants' Appeal Brief, radiator or air conditioning condenser components on automobile encounter vastly different conditions in terms of air space velocity and temperature compared to components of an HVAC system attached to an immovable structure, such as a residential or commercial building. The Examiner has failed to explain how one of skill in the art, given the disclosures of Fromson and Hager, would have arrived at the claimed invention. *See Ex parte Ito*, Appeal No. 1998-0223, for U.S. Pat. Appl'n No. 08/351,749 (BPAI 1998) ("We find that the Examiner has presented no evidence to base the conclusion of obviousness other than assumption that suggested modification of Humble '343 would have been a matter of mere substitution of art recognized equivalents. Such assertion by the Examiner cannot replace the requirement of factual evidence."). Rather, it is only Appellants who determined that an ozone catalyst could be placed on an outdoor component of an immovable HVAC system to enhance treatment of atmospheric air. *See Ex parte Harding*, Appeal No. 2002-1053, for U.S. Pat. Appl'n No. 09/702,981 (BPAI 2003) ("[W]e agree with the appellants . . . that the applied prior art does not establish that Wood's tensioning roll and the spring-biased movable dancer arms of Simmons are 'art recognized equivalents.' . . . In our view, the only suggestion for modifying Simmons to meet the above-noted limitations stems from hindsight knowledge derived from the appellants' own disclosure. The use of such

hindsight knowledge to support an obviousness rejection under 35 U.S.C. § 103 is, of course, impermissible.")

Accordingly, Appellants maintain that claims 49-59 are patentable over Fromson in view of Hager.

b. Claim 60 remains rejected as allegedly unpatentable over Fromson in view of Hager and further in view of Appellants' alleged admission of the state of the art. In the Response to Arguments section in the Examiner's Answer, the Examiner states:

The Appellant has acknowledged the art recognition of the catalytic activity of manganese oxide (see page 2, lines 35-38 of Appellants spec). Therefore, since Hager clearly teaches the use of copper oxides for their catalytic activity (see pages 2-3 of the English translation), it would have been obvious to one of ordinary skill in the art to substitute one catalyst for the other to yield the predictable result of removing ozone.

Appellants note that they have never argued that manganese oxide was not previously known as an ozone catalyst. What Appellants did argue, and maintain, is that the Examiner has adequately failed to explain is why it would have been obvious to dispose manganese oxide on the structures recited in claims 50, 53, 54 and 59 (from which claim 60 depends). As explained above, radiator or air conditioning condenser components on automobile encounter vastly different conditions in terms of air space velocity and temperature compared to components of an HVAC system attached to an immovable structure, such as a residential or commercial building. Again, it is only Appellants who determined that an ozone catalyst could be placed on an outdoor component of an immovable HVAC system to enhance treatment of atmospheric air.

Accordingly, Appellants maintain that claims 49-59 are patentable over Fromson in view of Hager and further in view of Appellants' alleged admission of the state of the art.

c. Claims 49-59 remain rejected as allegedly unpatentable over Beitz. In the Response to Arguments section in the Examiner's Answer, the Examiner states:

Appellant further argues that the modification of Beitz to place the catalyst on an outdoor component of the HVAC system for the purpose of combating the influx of ozone into and airconditioned structure is improper because Appellant alleges that such placement would not effect the air drawn into the residence. The Examiner would disagree and assert that abatement of ozone in the atmosphere surrounding a structure would intrinsically prevent or minimize the influx of ozone into the structure. The Examiner did not assert that the influx was a function of the outdoor component delivering that air into the structure. That would be accomplished by normal access of the residence interior such as the opening of doors and structural leakage. The modification of Beitz does not destroy the intended use of the system, but enhances by adding protection to the general atmosphere as well as that of the interior of the structure.

Appellants maintain that the Examiner has failed to adequately explain why one of skill in the art would have sought to modify Beitz by placing the catalyst on an immovable outdoor component of an HVAC system. Beitz teaches that an ozone catalyst can be installed in air conditioners, ventilation systems, and automobiles. *See* page 3, fourth full paragraph. Since the purpose of the catalyst in Beitz is to reduce "ozone content in the inhaled air" (*see id.*), a fair reading of Beitz is that the catalyst is placed on indoor components. Indeed, Beitz specifically states that the catalyst can be installed in "ventilation ducts to the passenger compartment of automobiles that are present, at the outflow side of air conditioners and ventilation systems, and also in devices and machines

like photocopiers that generate ozone." *See id.* at 4, third full paragraph. Thus, even if the Examiner were correct that abatement of ozone in the atmosphere surrounding a structure would intrinsically prevent or minimize the influx of ozone into the structure opening of doors and structural leakages (a slim possibility indeed), this still does not explain why one of skill in the art would disregard the explicit teaching of Beitz and place the catalyst on an immovable outdoor component in the first place.

The Examiner also states in the Response to Arguments section:

Appellant further argues that the catalysts of Beitz are directed to use at ambient temperatures while those of the invention work with high bulk air flow and/or elevated temperatures, and the Examiner would first point out that the Appellant's claims are all drawn to apparatus without structural limitations to the degree of airflow and the requiring only the capability of activity above 25°C (or 77° F). The Examiner would maintain that this argument is not persuasive because Beitz teaches that heat is not required for effective catalytic activity, but does not exclude the activity under heated conditions. Beitz also teaches the use of the catalyst in HVAC systems which intrinsically have heated conditions and the use of the catalyst in air streams (see the abstract).

Appellants respectfully disagree with the Examiner's characterization of Beitz in this regard. Contrary to the Examiner's position, Beitz does exclude activity under heated conditions: "According to the invention, a net-shaped catalyst is used that is coated with noble metal and is operated at normal temperature, meaning *it is not heated.*" *See* page 4, first full paragraph (emphasis added). Although, as the Examiner states, HVAC systems may intrinsically have heated conditions, the whole of Beitz teaches away from placing the catalyst in such conditions. As such, Beitz would not have suggested the subject matter of claim 57, wherein the catalyst is disposed on or downstream of a heat transfer

surface, or claim 58, wherein the catalyst is disposed on an air contacting surface at a temperature above 25° C.

Accordingly, Appellants maintain that claims 49-59 are patentable over Beitz.

CONCLUSION

For the foregoing reasons, Appellants maintain that claims 49-60 meet the requirements for patentability under 35 U.S.C. § 1 *et seq.* Accordingly, reversal of the Examiner's rejections is appropriate and is respectfully solicited.

Dated: October 30, 2009

Respectfully submitted,

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